



# CAIT

Center for Advanced Infrastructure & Transportation  
Rutgers, The State University of New Jersey

## QUARTERLY PROGRESS REPORT

Project Title:	Demonstration Project – The Measurement of Pavement Noise Using the NCAT Noise Trailer		
RFP NUMBER:	NJDOT PRINCIPAL Anthony Chmiel		
TASK ORDER NUMBER/Study Number: Task Order No. 140 / 4-29052	PRINCIPAL INVESTIGATOR: Thomas Bennert		
Study Start Date: 08/1/2003 Study End Date: 8/31/2004	Period Covered: 4th Quarter 2003		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
1. Pavement Type Selection	10%	100%	100%	10%
2. Pavement Noise Testing	70%	100%	100%	70%
3. Data Analysis and Reporting	20%	100%	100%	20%
Final Report				
TOTAL	100%			100%

1. Progress this quarter by task:

- A. A preliminary report by CAIT researchers was submitted to the NJDOT for review. Although the National Center for Asphalt Technology (NCAT) is responsible to presenting a final report on December 12<sup>th</sup>, 2003, CAIT obtained the results from NCAT to provide a preliminary report to the NJDOT for review. NCAT members will also provide a presentation on the testing and results at the NJDOT on December 12<sup>th</sup>, 2003.
- B. The results indicated that overall, HMA pavement surfaces were ultimately quieter than PCC pavement surfaces. The quietest pavement surfaces found were comprised of open graded friction course (OGFC), with the crumb rubber modified OGFC ultimately having the lowest recorded noise. The loudest pavement surfaces found were PCC pavements that had transverse tining. However, it was found that if the PCC was treated via diamond grinding, the tire/pavement related noise dropped significantly, even comparable to some of the quieter HMA pavement surfaces.
- C. The noise was found to have a linear relationship with the travel speed of the vehicle. Overall, a 0.2 decibel increase occurs for every 1 mph increase in traffic speed.
- D. The NCAT Noise trailer was found to be quite repeatable, as long as the measured test section was greater than 0.1 miles. Shorter test sections, especially bridge decks, were found to provide standard deviations much larger.

2. Proposed activities for next quarter by task:

- A. Doug Hansen from NCAT will provide a presentation of results for the NJDOT on December 12<sup>th</sup>, 2003. At this meeting, he will also provide a final report.

3. List of deliverables provided in this quarter by task (product date)

N.A.

4. Progress on Implementation and Training Activities

N.A.

---

Department of Civil and Environmental Engineering  
623 Bowser Rd. Piscataway NJ 08854-8014  
Tel : 732-445-0579 Fax: 732-445-0577

CAIT Confidential

Pavement Noise-QR-12-1-2003-FINAL.doc

Page 1 of 2



# CAIT

Center for Advanced Infrastructure & Transportation  
Rutgers, The State University of New Jersey

---

5. Problems/Proposed Solutions

N.A.

6. Budget Summary\*

Total Project Budget(# of years)	6 Months	\$15,000
Total Project Expenditure to date		\$13,127
% of Total Project Budget Expended		88%
Task Order Number/Study Number:		
Current Task Order Budget (# of years)	Year 1	\$15,000
Actual Expenditure to date against current task order		\$13,127
% of current task order budget expended		88%

\* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.

---

Department of Civil and Environmental Engineering  
623 Bowser Rd. Piscataway NJ 08854-8014  
Tel : 732-445-0579 Fax: 732-445-0577

CAIT Confidential

Pavement Noise-QR-12-1-2003-FINAL.doc

Page 2 of 2